DECISIONS, DECISIONS: EXAMINING THE ROLE OF EMOTION IN LOW-INVOLVEMENT PRODUCT PURCHASING DECISIONS

by

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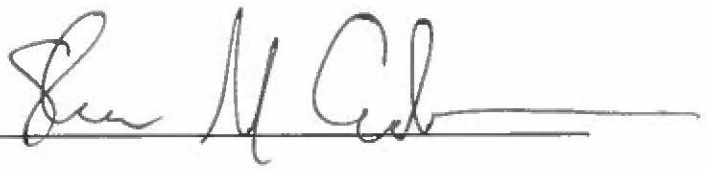
Approved: 

Shan M. Anderson

The idea that conscious rational thought leads to good decision making is one that had pervaded Western thought for centuries. It has also led to a general misconception about the absence of emotion from good decision making and the ability of humans to conduct themselves on the basis of purely rational thought.

In a study conducted on millennials at the University of Oregon, subjects were asked to choose one brand of bottled water over two others. Their decisions, the factors involved and their ability to articulate their decision-making process were measured over the course of a two-week period.

The results gathered and the hypotheses tested indicated that unconscious emotion was heavily involved in the decision-making process and manifested itself in a variety of different behaviors. This study has greater implications about the way that millennials make product purchasing decisions and the emotional influences involved decision making overall.

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Introduction

There is nothing that affects every aspect of our lives so much as the decisions we make. From the moment we awake in the morning till we make the decision to shut our eyes and go to sleep, and even sometimes after that, we are constantly making decisions. Today alone you have made decisions about whether or not to brush your teeth, take a shower, eat breakfast and a countless string of others that have led you to this current moment in time where you sit, or perhaps stand, reading this document. The decisions we make shape how we spend our hours, our days and eventually our lives and the number we are faced with grows larger every day. On a given day, the average adult will make approximately 35,000 decisions.

The overwhelming number of decisions made by humans on a daily basis and the weight that they collectively hold have led me to question exactly how the human decision making process works. Is the human decision-making process a completely conscious one or do elements of decision making occur sub-consciously? What is the role of emotion in the human decision making process and how does it work together with conscious rational thought? These are all questions that have in the last century began to be more fully understood through developments in psychology and neuroscience and which have informed and directed this thesis.

The goal of this research is to contest the assumption that I have encountered all too often and that continues to pervade western culture – that conscious rational thought is at the basis of all good decision making. This belief finds its roots with ancient philosophers, who while brilliant in their own right, did not have access to the science and research that we do today. The belief that in order to navigate our 35,000 daily

decisions well, we need consciously and rationally evaluate each one is not only illogical but incorrect. Rather it is emotion that makes these decisions possible. Without it we would be stuck as soon as we stepped out of bed rationalizing whether brushing our teeth or taking a shower offered us the most benefit.

Consumer decisions are arguably some of the most important that we make because they involve measurable costs and benefits and can over time drastically influence the course of our financial lives. This study tests for and evaluates the presence of emotion in consumer decisions for low-involvement products, specifically investigating millennials and bottled water brands. The importance of its implications lie in contributing to a more thorough understanding of the role of emotions in consumers' everyday purchasing decisions.

Literature Review Part I: The History and Science Behind Emotion in Decision Making

For as long as humans have been making decisions, humans have been contemplating the way they make decisions. Most of the discourse surrounding decision making, until very recently, has been grounded in the idea that human beings are rational and thus make decisions rationally. Although at first, a seemingly easy concept to grasp, rationality can actually be difficult to clearly define. The term is usually used to describe a deliberate and logical style of thinking (Lehrer, 2009). Rational decision making, then, would include the careful analysis of alternatives and the weighing of pros and cons to uncover and eventually choose the most beneficial course of action.

The connection between rationality and good decision making is widely accepted in Western culture and plays a significant role in a variety of professional fields. Modern economics is arguably the clearest testament to this, as a field whose theories, predictions and recommendations are all primarily rooted in rationality. The rational-choice theory, for example, is an economic theory that assumes people make decisions by multiplying the probability of getting what they want by the amount of utility that it will bring them (Lehrer, 2009). This theory, which is also the basis for most other mainstream economic theories, is one of many that support the idea that rationality maximizes happiness.

If rationality has been traditionally linked to good decision making, emotions have been linked to the exact opposite, villainized by the mainstream as the enemy of reason. To find evidence of this, we need not look further than our own experience. From the time we are children, we are advised to “keep a level head.” Experts tell us to

keep emotion out of decision making and professionals instruct you to leave your personal feelings at home before coming to work. The term “emotional” is generally a disparagement that carries with it associations of unbalanced and poor judgement. When it comes to decision making, we have been trained not to trust our emotions and to defer instead to rationality.

Foundations of Rationality

Much of what is believed today about decision making has its origins thousands of years ago in ancient Greece. For centuries, the Greeks developed elaborate ideas about human behavior by observing people in their everyday lives, relying on untestable assumptions about the mind’s inner workings. These assumptions were dependent on an important belief – that humans are rational. This belief was central to the theories of philosophers like Socrates and Plato, among others, who have been instrumental in shaping western ideas that continue to persist today (Lehrer, 2009).

Socrates, the Greek philosopher who lived from 470-399 BC, is arguably one of the most influential thinkers of his and any other time. He spent his whole life in pursuit of truth and reason. And although he did not keep any written records of his ideas, they were later recorded and carried on by his students, Plato and Xenophon. Socrates believed that the only basis for action was truth and that the only way to reach the truth was through reason. People, according to Socrates, act in the ways they believe best for themselves. What separates the good people from the bad people is that the good reason correctly what is good for them while the bad reason incorrectly. All wrongdoing is the effect of errors in cognitive judgment caused by, among other things, emotion. For this

reason, Socrates avoided emotional impulses in support of rational thought (Sadowsky, 2005).

Socrates' student Plato was a similar advocate of rationality. The ability to analyze facts and supersede both feelings and impulses is often seen as a defining characteristic of human nature (Lehrer, 2009). Plato was one of the first to explore this ability in depth and its role in the decision-making process. He imagined the mind as a chariot pulled by two horses. The driver of the chariot was rationality, the part of us that consciously analyzes and weighs all options in order to determine the best course; He maintained control by guiding the horses and managing them if they acted up. One of the horses pulling the chariot was well-bred and behaved. This horse represented the spirit, the part of us that thrives off of overcoming challenges, victory and honor. The second horse was wild and far more difficult to control. Plato identified this second horse with negative, reckless and destructive emotions primarily associated with the human appetite for various pleasures, comforts, satisfactions and ease. It is essential, he argued, when the driver and the horse want different things, to listen to the driver (Kerns). If we follow the will of the two horses, said Plato, "we will be led like a fool into the world." (Lehrer, 2009, p. 9) The idea that conscious rational thought should be used to subdue emotions, both the reckless and less destructive ones like those represented by the first horse, has been one of his most enduring.

More than two thousand years after both Socrates and Plato lived, their ideas continued to be echoed by different philosophers and scholars from around the world, one of which was the Austrian, neurologist, Sigmund Freud. Freud also supported the idea of the conflict between the rational and emotional mind. Freudian analysis divided

the mind into different parts, at the center of which was the id, a manufacturer of impulse and desire. According to Freud, the id could only be restrained by the ego, the conscious and rational section of the mind. His goal was to teach his patients how to strengthen the the ego's ability to overcome and control the id, believing like Plato good decisions were the result of cognitive rational thought (Lehrer 2009).

It is not hard to understand why these ideas have persisted and become engrained in Western culture. Journalist Jonah Lehrer in his book *How We Decide*, describes how fixation on the human powers of rationalization, "raise Homo Sapiens above every other animal: the human brain is a rational computer, a peerless processor of information." Yet, he argues, doing so also does the disservice of explaining away our flaws (Lehrer, 2009, p. 13). The tendency to link emotion with faulty decision making has led us to belittle the emotional brain. In reality, emotions are much more instrumental to decision making than Socrates, Plato and Freud would have us believe.

Phineas Gage

One of the most important people in helping provide evidence of the role of emotion in decision making was not a psychologist or a neurologist but a construction worker. In 1848 Phineas Gage, a construction foreman from Vermont, was helping to lay down railroad tracks when an accident occurred which caused one of the metal rods he was working with to go through his face and out the back of his head. Miraculously Gage managed to survive the accident and outside of losing sight in his left eye, make a seemingly full recovery.

Arguably the greatest impact the accident had was on his personality. Prior to his injury, Gage was described by peers as having "considerable energy of character."

He had a well-balanced mind and was a well-liked, shrewd, smart businessman. However, after the accident occurred, he became what those who knew him described as disrespectful and fitful. He began using heavy amounts of profanity and was unpredictable and indecisive. The decisions he did make were judged by others to be outside of his best interest and he was extremely resistant to advice when it conflicted with his desires. Due to his new and unpredictable personality, his employers refused to rehire him. He moved around from place to place and job to job unable to find any kind of stability before his death in 1860 (Damasio, 1994).

Gage's injury and the subsequent changes in his personality and decision making abilities, would not be fully understood until almost a century and half after his death when modern technology would help to clearly identify the damaged region of his brain. Neuroscientist Hannah Demasio is credited with having narrowed the damage in Gage's brain to a specific compromised area, that being both of his prefrontal cortices in the ventral and inner surfaces of both hemispheres. In other words, the section of the brain that caused Gage's personality change lay at the underside of his frontal lobe, the upper front portion of the brain which houses emotional control and personality, close to the midline (Damasio, 1994) (Frontal Lobes, 2016).

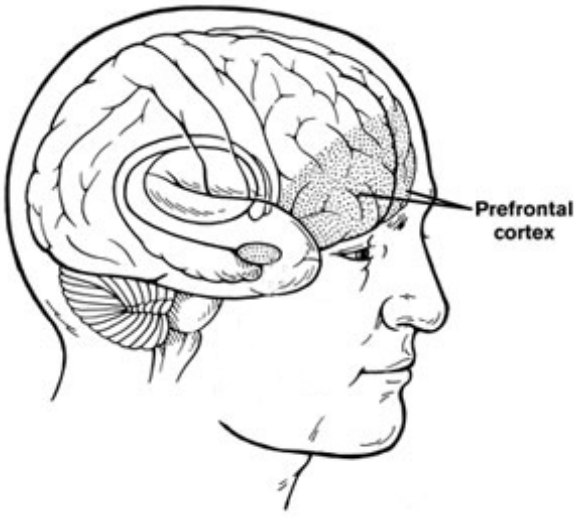

Figure 1: Prefrontal cortices

The area of Gage's brain damage was narrowed to his prefrontal cortices near the ventral and inner surfaces of both hemispheres, the area in this figure close to the midline that divides both cortices, directly behind the eye.
(Bipolar Network News, 2013)

Further investigation into patients with damage to this region of the brain would reveal it as an area critical to emotional function and subsequently decision making.

Antonio Demasio and Elliot

The story of Phineas Gage and its neurological implications had always been of interest to Antonio Demasio, one of the world's leading neuroscientists and one of the people at the forefront of helping prove the role of emotions in decision making. Demasio's interest in Gage proved incredibly important when in 1982 he took on a new patient, Elliot, whose condition was strikingly similar.

Elliot was in his mid-thirties and at the time he began seeing Demasio, was incapable of maintaining any sort of job and was living in the custody of his siblings. Despite this, Demasio describes Elliot as intelligent, skilled and able-bodied. He had a

flawless memory and a wealth of business knowledge and skills. This was not just opinion or observation; Elliot was also tested by a series of professionals each who declared his mental abilities fully intact. This implied to outsiders that Elliot's difficulty keeping a job was the result of laziness and thus he was denied disability payment.

Elliot was referred to Demasio after undergoing brain surgery. The surgery was for the removal of a tumor which had been growing in the midline of Elliot's frontal lobe, the same spot that was damaged in Gage's accident. Before it was removed, the tumor had compressed and killed a fair amount of brain tissue in that region. The surgery was successful and also like Gage, Elliot appeared to have made a full recovery. It didn't take long, however, before Elliot's family and friends began to notice changes in his personality.

Prior to the surgery Elliot was credited as a good father, husband and businessman. He had, according to Demasio, "achieved an enviable personal, professional and social status." (Demasio, 1994, p. 35) Shortly afterwards, his life began to unravel. At work, he could no longer be trusted to complete his responsibilities. He often would stop a job mid-task in favor of doing something he found to be more captivating. This eventually led to his termination. What followed Elliot's job loss was a series of flawed personal and financial decisions ending in two divorces and bankruptcy.

One of the most outwardly obvious change in Eliott's personality, was his almost complete lack of emotion. Demasio noted his ability to recount the hardship and embarrassment he had endured with almost complete emotional detachment. He did not appear to be at all affected by his tragedy. Demasio remarked that in all the hours he

had spent with Elliot he never saw a trace of emotion, “no sadness, no impatience, no frustration.” (Demasio, 1994, p. 45) Even Elliot himself noticed the change in his emotional state. He could sense how topics that, prior to his illness, would have evoked strong emotional responses no longer did.

In conjunction with his emotional deficit, Elliot was utterly incapable of making decisions. He was either unable to choose effectively or he was unable to choose at all. This was not because he lacked any sort of ability to reason through a problem. On the contrary, he would come up with every possible avenue of execution, wasting countless hours on meaningless deliberations and irrelevant details. Choices like whether to use a blue or black pen, which radio station to listen to or where he ought to park his car left him stumped. When deciding where to eat lunch, Elliot meticulously considered each option’s lighting, layout and menu. He went so far as to drive to each location and check their busyness (Lehrer, 2009). Elliott’s difficulty making decisions left him without more than a place to eat, it prevented him from functioning as an effective member of society (Demasio, 1994).

If the ideas of Socrates and Plato were correct, then Elliot’s emotionlessness would have been incredibly beneficial to his decision making. Without the trouble of emotions misleading him, he would have been free to pursue only the most rational courses of action and as a result make only the best decisions. However, this was clearly not the case. What Demasio discovered was, in fact, the exact opposite. He believed that Elliot and Gage suffered from the same fate, that the traits both men had developed after their injuries, their lack of emotion and good decision making, were connected. This

would mean that the neurological structures damaged in both men, happened to be necessary for effective decision making. And he set out to prove it.

The Orbitofrontal Cortex

At the time he published his book on the matter, *Descartes' Error*, Demasio had studied twelve patients with similar conditions to both Elliot and Gage. Each had experienced similar damage to their prefrontal cortices and each had later developed a combination of what he called, the "decision making defect," and "flat emotional feeling." Although many of the cortical areas in the brain make critical contributions to the decision-making process, historical documentation and lab evidence led to Demasio's conclusion that damage to the orbitofrontal cortex is consistently associated with impairments in reasoning, emotion and overall decision making." (Demasio, 1994, p. 53)

The orbitofrontal cortex is the place in the brain where reason and emotion metaphorically meet. People who experience damage to this area of the brain, which sits just behind the eye on the belly of the frontal lobe, showed the same pattern. The patient would make a seemingly full recovery and soon after realize that the choices of everyday life had become exceedingly difficult.

The orbitofrontal cortex is tasked with incorporating visceral emotions into our decision making by connecting the resulting feelings generated by both the brain stem and the amygdala into our stream of conscious thought. In his book, *How We Decide*, Jonah Lehrer, describes the phenomenon: When a person is drawn to a particular item on a menu or a romantic prospect, the mind is trying to tell you to choose that option. "It has already assessed the alternatives – this analysis takes place outside of the

conscious awareness – and converted the assessment into a positive emotion." It works similarly with negative emotions. When you see someone or something you don't like, your orbitofrontal cortex will incorporate these emotions in the resulting decision to move away (Lehrer, 2009, p. 18).

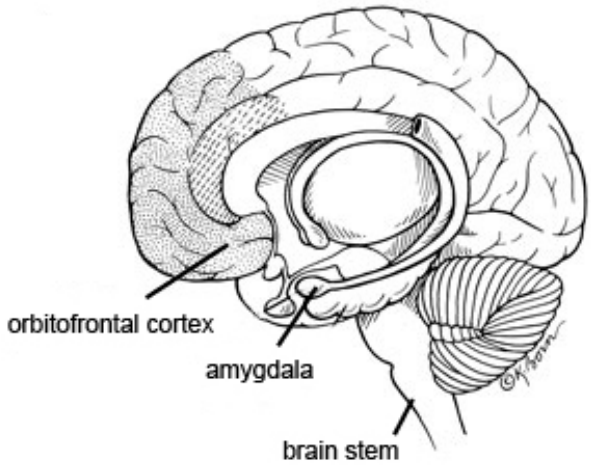

Figure 2: The orbitofrontal cortex, amygdala and brain stem

The orbitofrontal cortex connects emotion to decision making by taking feelings generated by the brain stem and the amygdala and integrating them into conscious thought.
(Wohl, 2011)

The Role of Dopamine

Dopamine is an essential part of the process as the molecule in the brain that cells use to communicate with one another. Lehrer describes it as the "neural currency of the mind." (Lehrer, 2009, p. 35) Dopamine is responsible for regulating all emotions and helping us choose between alternatives. It does this by generating patterns based on experience. This idea was first discovered by German neuroscientist, Wolfram Schultz after performing a series of experiments on monkeys.

Schultz would sound a loud tone before giving a monkey a few drops of apple juice. While this occurred, Schultz would monitor the electrical activity in the individual cells of each monkey's brain. He observed that dopamine neurons fired or increased at the moment when the juice was delivered. The increase was the response to the reward. After a while though, the dopamine neurons would fire at the tone that proceeded the juice. The increase would continue when they received the reward. If, however, Schultz sounded the tone and did not then give the particular monkey any juice, its dopamine increase at the sound of the tone would be followed by decrease in the firing rate and the monkey would feel upset.

There are two important takeaways from Shultz's study. The first is the ability of the brain to perceive patterns and use them as a sort of mental shortcut. The monkeys were able to unconsciously pick up on the connection between the tone and the apple juice that followed which triggered a shortcut in their brain to begin rewarding them with dopamine prior to the juice. The second is the powerful effect of dopamine levels on our feelings which are often, without our knowledge, the basis for many of our decisions. The brain knows what details to look for and once it analyzes them, what follows is the conversion of these details into the appropriate feelings. Thus our feelings are really snapshots of all the data that our brain has collected and processed, the data that we cannot access consciously.

Lehrer, argues that the process of thinking is entirely dependent on feelings, "for feelings are what let us understand all the information we cannot directly comprehend. Reason without emotion is impotent." (Lehrer, 2009, p. 26) Damage to the orbitofrontal cortex severs this connection between emotion and reason without which people like

Elliot and Phineas Gage are unable to access the feelings they rely on to make decisions. Contrary to the beliefs of Socrates and Plato and all others who would urge you to disregard your feelings, emotion is not only present in decision making, it is essential to it; without it we would be a society full of Elliots and Gages.

Literature Review Part II: Emotional Decision Making Behaviors

Although neurological evidence of the role of emotion in decision making wasn't discovered until relatively recently, it has since informed a number of theories within the last several decades that help explain human behavior. Each of the following theories demonstrates in some capacity the presence of emotional thought and its influence on day to day decision making.

Thin Slicing

Thin slicing is a psychological term which describes the ability of the unconscious mind to observe a very small section of an interaction or experience and derive patterns from that very narrow slice. These patterns are immediately translated into a correlating emotion then used to develop a more holistic conclusion about that something or someone. Thin slicing is an essential part of the human experience. In his book *Blink: The Power of Thinking Without Thinking*, author Malcom Gladwell argues this point: "We thin-slice whenever we meet a new person or have to make sense of something quickly or encounter a novel situation. We thin-slice because we have to, and we have come to rely on this ability." (Gladwell, 2005, p. 44)

The accuracy of thin slicing has been thoroughly investigated and demonstrated in a number of areas. These areas include but are not limited to first impressions of strangers, telephone operator's job performance, teacher or instructor ratings and trustworthiness of salespeople (Thompson, 2012).

There are a number of different professions and practices that benefit from the ability to thin slice and have developed their own terminology for it. In basketball, for

example, a player who can take in and quickly comprehend his or her surroundings is said to have a “court sense.” Military generals with an exceptional ability to see and immediately make sense of a battle field are said to possess a “coup d’oeil” which in French means “power of the glance.” And bird watching is a practice based almost entirely on the ability of the birdwatcher to identify a bird in one glance (Gladwell, 2005, p. 46). Each of these professions, are incredibly reliant on the participants’ ability to thin slice which is itself directly dependent on the communication of patterns via emotion.

Thin slicing often results in what are commonly known as snap judgements. While the results of these judgements are apparent, the processes behind them are unconscious, remaining behind what Gladwell calls “a locked door.” As a result, people often experience difficulty or a complete inability to articulate what led to a certain judgement and its resultant actions.

Psychologist Norman R.F. Maier demonstrated this during a study in which he hung two long ropes from the ceiling. Around them he spread a variety of furniture and different kinds of tools. The ropes were separated from one another just enough so that a person holding onto one could not touch the other at the same time. Maier asked each participant to find as many ways as they could to tie the two ropes together knowing already that there were only four possible solutions. The first was to stretch the rope as far as possible and anchor it to one of the pieces of furniture around the room leaving the participant free to grab the second rope and tie the two together. The second solution involved taking a third length from somewhere in the room, an extension cord for example, and tie that to the end of one rope enabling the participant to bring one to the

other. The third was to hold the rope in one hand and use an instrument like a long poll to pull the other towards the direction of the first. These first three solutions were discovered easily and quickly by each of the participants. The fourth however, to swing the rope like a pendulum and grab on whilst holding the other, occurred to only a few.

After allowing stumped participants to stew for a while, Maier would cross the room and unsuspectingly brush one of the ropes causing it to swing back and forth. Almost instantaneously, participants were able to guess correctly the fourth solution.

What is most important about this is that when Maier later asked how they were able to come up with the last method, their responses were, “It just dawned on me,” or “I just realized it,” and other statements to that effect (Gladwell, 2005, p. 70). Maier notes that these respondents weren’t lying and they were not simply too embarrassed to admit they had needed his hint. Rather, his hint was processed by them on such a subtle and unconscious level that they were completely unaware of it and therefor at a loss to explain the origin of their problem solving. It remained behind a locked door.

Thin slicing and the emotional cues that it results in are at the root of so many of the decisions we face every day. Decisions that it would take far too long to rationally and consciously think through. Not only is thin slicing inevitable but the snap judgements decisions it leads to are often incredibly accurate. However, because the processes involved happen outside of our conscious mind, we are not able to give them the credit they deserve.

Loss Aversion

Loss aversion is the theory that the pain of losing something is twice as powerful as the pleasure of gaining something of the same or similar value. This idea was first

introduced by psychologists and partners Amos Tversky and Daniel Kahnmen, and has since then been proved countless times (Loss Aversion, 2016). The following study, conducted by behavioral neuroscientist Dean Buonamano, clearly demonstrates loss aversion and its effects on decision making.

Participants were each given $50 at the start of an experiment and asked to choose between one of two options. Either they could keep $30 of the original $50 or they could gamble the whole $50 with a 50% chance of keeping or losing all of it. When presented with this choice, 43% of participants chose to take the gamble. Buonamano performed the same experiment on a different set of participants, with one very important difference: this time he presented participants with the option of losing $20 of the original $50 or gambling it with the same $50 chance of losing or keeping it all. Although both versions of the experiment present the same alternatives, in the second version the number of people willing to gamble increased to 61% (Buonoamano, 2011). The reason: Because Buamano framed the first choice as a loss (losing $20) rather than a gain (keeping $30) people were more likely to avoid that option. Losing $20 is perceived as worse than keeping $30. Jonah Lehrer observed the same thing of grocery shoppers who more likely to buy meat when it was labeled as “85% lean” than when it bore the label “15% fat.” (Lehrer, 2009, p. 106) The negative feelings that come from a loss are stronger than those that come from a gain.

Everyone capable of experiencing emotion will find themselves vulnerable to loss aversion. This tendency to avoid loss shapes our behaviors and influences our decisions, even the ones that involve a great deal of conscious consideration. The existence of loss aversion proves in itself the role of emotion in decision making. If

humans were able to decide on a purely rational level, then a choice with equally positive and negative outcomes would be a difficult one to make. However, the as the aforementioned studies and many others have demonstrated, this is not the case.

The Decoy Effect

When people are presented with options, they view them relatively to the local alternatives. This is why the same person might have no problem tipping $200 for a $5000 catering bill and also spend the time to cut out a dollar off coupon for a $10 frozen dinner (Ariely, 2008). Decisions are influence by comparisons. And the easier it is to compare two things, the more influence said comparison will have on a decision.

The decoy effect is when the addition of an inferior option to a set of choices alters a person's preferences among the prior set of superior alternatives (Slaughter & Quinones, 2011, p. 250).

Dan Ariely, author and professor of behavioral economics and psychology a, tested the decoy effect on his students at MIT. He describes the results in his book, *Predictably Irrational*. In his study Ariely used, appropriately enough, the real pricing for digital and print subscriptions of *The Economist* and asked participants to choose one. The publications pricing options and the number of students who chose each were as follows:

Web Subscription: $59 (16 students)

Print Subscription: $125 (0 students)

Web and Print Subscription: $125 (84 students)

This would have resulted in a total revenue of $11,444.

To no surprise, none of the students selected the decoy print subscription. Why would they when they could get more for the same amount of money? Ariely then performed a second test without the decoy product which yielded the following results.

Web Subscription: $59 (68 students)

Web and Print Subscription: $125 (32 students)

This would have resulted in a total revenue of $8,012 (Ariely, 2008).

The addition of a decoy option resulted in a more than $3000 increase in hypothetical sales for *The Economist*. Although the costs and benefits of the web subscription and the web and print subscription remained the same, the decoy yielded drastically different decision-making results. The original options did not get any better or worse, rather the addition of the decoy provided a frame that triggered a different emotional response from participants. The decoy effect offers yet another example of the prominent role that emotions play in even what the most presumably rational decisions.

The Effect of Expectations

Expectations have a significant effect on decision making. People are prone to seeing things how they expect to see them. This can sometimes cause a discrepancy between the way we view something and the way things actually are. If you tell someone that something is distasteful, it is likely that they will end up agreeing – not because they truly agree but because they expected that to be the case (Ariely, 2008).

Dan Ariely set out to test this theory on another group of students at MIT. Specifically, Ariely wanted to know if a bar customer's prior expectations about a beer would impact how the beer tasted to them. He used two types of beer in his experiment:

Budweiser and a concoction which called MIT Brew. MIT Brew was made by adding a few drops of balsamic vinegar to Budweiser. He had students taste test both drinks. Half of them were made aware of the ingredients of each beer and the other half were not. Of those who knew which was which, most said Budweiser tasted better. However, of the students who blindly tasted each beer, the majority preferred the taste of the MIT Brew (Ariely, 2008).

Ariely conducted a similar experiment, this time by setting up a fake coffee shop on campus. He offered free coffee to any students who were willing to answer a short series of questions. Along with the free coffee they were given access to a table of additives and condiments. Ariely's questions asked how much each student liked the coffee, if they would like it served on campus in the future and the maximum price they would be willing to pay for it. Each day during the experiment he varied how he displayed the condiments. Sometimes he placed them in "beautiful glass and metal containers, set on a brushed metal tray and with small silver spoons and nicely printed labels. At other times [he] placed the same odd condiments in white Styrofoam cups. The labels were handwritten in red felt-tip pen." (Ariely, 2008)

What Ariely found was that the fancier the condiments were displayed, the more likely student would be to say they liked the coffee a lot and that they would recommend serving it in the cafeteria. In addition, the price that they said they would be willing to pay rose as with the sophistication of the set-up. He concluded that, "when the coffee ambience looked upscale, the coffee tasted upscale." (Ariely, 2008, p. 204)

The experience of these students was not so different from that of the monkeys in Wolfram Shultz's study with the tone and the apple juice. What they both

demonstrated was the tendency of the brain to analyze and draw connections unconsciously then influence our emotions causing us to feel a certain way about something. In the case of Ariely's students, prior experience with sophisticated presentation was connected to quality. His experiment demonstrates the direct impact of unconscious emotional analysis on human decision making in even one of the most supposedly rational aspects of life: spending money.

Mere Exposure Theory

People prefer the familiar. According to a study published in the *Journal of Consumer Research* this is particularly true of consumers who are more likely to purchase a product they have previously focused their attention on than a product they have previously ignored or overlooked. As with many other forms of decision making, the general assumption seems to be that people will choose rationally and buy products that offer them the best value for their cost. However prior exposure tends to shift consideration in favor of products that consumers have already given some amount of attention to, regardless of the product's value.

During the first part of the study, participants were presented with a number of unfamiliar brands of products like soda, cheese, shampoo and chocolate. They were asked to locate particular brands among a display of two competing brands, for example two brands of chocolate. This was repeated for different pairs of each product, with specific brands serving as the "selected brands" and others as the "neglected brands."

The second part of the study involved asking consumers to choose between one "neutral brand" they had not yet been exposed to and one of the selected brands they had already seen. They were also asked to choose between one ignored brand and

another neutral brand. Unsurprisingly most preferred a selected brand to a neutral brand. But what was most interesting was that the majority of participants preferred a neutral brand to one they had previously ignored (University of Chicago). The more we are exposed to something, the more likely we are to feel positively about it.

This phenomenon is not exclusive to consumer products but can apply to really any stimulus like places and people. For example, when passing two strangers on the street, neither of whom you've met, you are more likely to feel an affinity for the one that you have seen on an occasion before that than one you have never seen at all despite the fact that you know nothing about either (Fournier). What is the rationale for that?

Social psychologist Robert Zajonc tested the mere exposure theory using various stimuli including Chinese characters and photographs of different faces. He presented each participant with a specific stimulant a different number of times (varying between 0 and 25) in a counterbalanced order with other stimulants. Afterwards he asked subjects to rank each thing that saw on a scale of favorableness. Holding true to the mere exposure theory, the stimuli that people saw the most were rated the highest despite the fact that, as in the case of the Chinese Characters, they may not have even understood a particular stimulus at all (Psychology Press).

Familiarity with a product or stimulus does not make it more or less beneficial for us, however so often we believe this to be the case based on the emotional signals our brain sends to us. If we were to think rationally about all familiar and unfamiliar stimulus, we would still need to carefully consider and evaluate each one individually. But people don't have time to do this with everything they encounter in life. If I wanted

to buy a bar of chocolate from the grocery store and wanted to make my decision based on rationality alone, I would be there all night considering my options. Situations like this are when emotion is not only present in decision making, but necessary for efficiency.

The literature cited in section I and II of this review all contributed meaningful information to my thesis study, from why people cling so hard to the idea of rational decision making to the neurological and psychological studies that prove not only the presence of emotion in decision making, but the necessity of it.

Research Background

This thesis is concerned with the presence and role of emotion in decision making. Prior to beginning this project, I found myself falling victim to the cultural misconception that all good decisions are purely rational. That is not to say I believed that emotion never played any part in my decision making, but that in holding to the ideas of those like Plato and Socrates, when it did it impeded the rational mentality that might have led to a more beneficial course of action. This assumption was quickly corrected after I began my secondary research which indicated not only the presence of emotion in decision making but the absolute necessity of it. I was particularly intrigued by the utter inability of patients like Gage and Elliot to make even the most mundane decisions like which color pen was best to use. It led me to question how emotion might be involved in other seemingly inconsequential decisions and directed me in formulating my primary research.

Decisions accumulate over time and collectively direct and influence the course of our lives. One of the clearest ways to measure the combined impact of our decisions is by examining what we choose to spend money on. I wondered how emotion factored into consumer purchasing decisions, which have relatively clear costs and rewards in comparison to less quantifiable types of decisions. The decision to purchase something costs the monetary amount paid and the reward for the decision is measured in the product obtained in the transaction and its benefits to the consumer. This clear cost and reward system would seem to indicate that purchasing decisions are primarily rational. However, studies done on things like the mere exposure theory or the decoy affect

directly contest this assumption and illustrate the unconscious effects that often cause people to overlook their rational evaluation of a product.

I wanted to observe this tension between the rational and emotional factors of a decision firsthand and understand the direct involvement of emotion in product purchasing decisions. Because there are so many different types of products available to consumers for purchase and even more factors that go into the choice to buy them, I knew that I would need to narrow my focus. So I chose to specifically investigate millennial purchasing decisions of bottled water, an area that I found to be the most personally interesting and one that I felt would yield the most interesting results.

Millennials

Millennials are those born between the years of 1977 and 2000, putting them currently between the ages of 16 and 39. I chose this group as the subjects for my research for multiple reasons. The first was ease of access; being on a college campus, I have easy access to a large number of millennials. But more importantly, I chose millennials because, those on the younger end especially, have reached a time in their lives when they are new to or are gaining significantly more financial independence. This would theoretically make them more cognizant of the considerations that go into purchasing decisions. If anyone had the incentive to carefully and rationally weigh the pros and cons of a financial decision, it would be those who have less practice making them.

Millennials are also the first digital generation. They are the best educated age group in the US with infinite information available to them at the click of a button. A study conducted by the Intelligence Group shows that they use this information when

making purchasing decisions with 75% conducting online research before buying a product (Cass, 2015). Additionally, millennials currently make up 21% of consumer discretionary purchases in the US and control over a trillion dollars in direct buying power and so collectively their purchasing decisions have large scale economic effects (Who Are Millennials, 2015).

Low Involvement Products

Today there are billions of products available for purchase but not all products are equal in the eyes of consumers. Marketing professionals have developed a method of product categorization outside of just price and type, by consumer involvement. Categories include high and low involvement and occasionally levels falling somewhere in between. The levels of involvement are representative of consumer interest or product importance as well as the amount of information necessary for a consumer to make their purchasing decision. The level of involvement varies not by product but rather from consumer to consumer.

High involvement products carry greater risks and rewards for consumers. They are usually more expensive, but not always, and they require more extensive consideration before purchase than low-involvement products. Consumers of high-involvement products usually spend more time comparing aspects like features, prices, warranties between similar products. (Low-Involvement, 2013)

Low involvement products are of relatively little importance to consumers and purchasing decisions are based on limited information or information gathered in the past. Consumers often engage in routine response behavior when making these kinds of decisions. For example, a consumer may buy the same coffee drink from the same shop

every morning. He or she may not even consider other coffee options because consuming that particular beverage has become habit. Low-involvement purchasing decisions may also be impulsive, with little to no planning or previous thought involved.

A commodity product is one example of a low-involvement product. Commodity products are those whose units are identical or extremely similar, thus they can be easily substituted for one another. They are opposite on the spectrum from differentiated products which are unique to the person or company that produces them (Hofstrand, 2007).

Bottled Water

I cannot imagine a lower involvement product than bottled water. Product costs are low, not usually exceeding $3, as are their benefits. The serving size of a standard single 16oz bottle is only 25% of the recommended daily water consumption. Despite this, sales of bottled water have skyrocketed in recent years. In 2014 the total volume consumed in the US was over 11 billion gallons, a 7.3% increase from the previous year. This calculates to roughly 34 gallons consumed per person in the U.S. Revenue from sales in that year came out to 13 billion dollars with bottled water outselling soft drinks in 17 major U.S. cities. The managing director of research for the International Bottled Water Association, Gary Hemphill, notes that every segment of the bottled water industry is growing and considers bottled water to be “the most successful mass-market beverage category in the U.S.” (Bottled Water, 2016) The success of the bottled water industry is even more impressive when taken into consideration that the average

cost is about $1.22 per gallon, making it more than 300 times as expensive for consumers as it would be to get the same amount of tap water (Boesler, 2013).

As a commodity product, most types of bottled water don't vary considerably in taste or price however there are still quite a few brands on the market and their sales do vary. For example, while Dasani bottled water sold 1.02 billion dollars in 2015, Aquafina sold .96 billion with Nestlé Pure Life selling just under that amount. Fiji bottled water sold only .28 billion dollars. The difference in these figures suggests that despite product similarity, consumers do have brand preferences which signifies that they are making involved decisions about which bottled water they purchase rather than choosing blindly (Statista, 2015).

What I find most interesting about this category and one of the reasons I was interested in investigating consumer decisions around it, was the dichotomy between the fact that bottled water is by nature a very basic product and yet with the availability of tap water, purchasing bottled water involved irrational factors as well.

Bottled Water Brands

The brands of bottled water I chose to investigate were Aquafina, Glacéau SmartWater and FIJI Water. I chose these three because they were each in the top 10 for sales in 2015, they were all distributed by multiple retailers throughout Eugene, Oregon, the area where I conducted my research, and they were all different in terms of what they claimed to offer the consumer.

My research and comparison of each brand allowed me to break down their product features into seven categories: Packaging, taste, price, water type, water source, water treatment and electrolyte or mineral content. When calculating price, I did so with

1-liter bottles. The following is a summary and breakdown of each brand of bottled water.

Aquafina

Packaging: Aquafina's packaging, directly below the label reads, "pure water, perfect taste. PURIFIED DRINKING WATER."

Figure 3: 1-liter bottle of Aquafina

(Aquafina, 2016)

Price: A 1-liter bottle costs $1.59 at Safeway, a grocery store located close to the University of Oregon campus where this study was conducted.

Water Type: Purified water. The FDA Defines purified water as water produced by distillation, deionization, reverse osmosis or other suitable processes (Smartwater, 2016).

Water Source: Municipal or public water systems, the same source as tap water.

Water Treatment: Aquafina is purified using a seven step filtration system they call Hydro-7™. Hydro-7™ is a process developed by Aquafina that includes reverse

osmosis which uses a semi-permeable membrane to remove things like chlorides, salts and other substances that can affect a water's taste (Aquafina, 2016).

Electrolytes & Minerals: Aquafina's water treatment eliminates trace compounds like carbonates, bicarbonates, chlorides, sulfates, phosphates, nitrates, calcium, magnesium, sodium, potassium, iron and manganese. Although the minute levels of these compounds in most bottled waters do not impact health. Aquafina claims removing them results in a purer water (Aquafina, 2016).

Glacéau SmartWater

Packaging: SmartWater's packaging directly below the label reads, "vapor distilled water and electrolytes for taste."

Figure 4: 1-liter bottle of Glacéau SmartWater

(Smartwater, 2016)

Price: A 1liter bottle costs $1.69 at Safeway.

Water Type: Purified water.

Water Source: Most of SmartWater's purification facilities source the water from municipal or public water systems. There are however some that obtain their water from protected groundwater sources (Smartwater, 2016).

Water Treatment: The water initially passes through a granular activated carbon filtration and is then treated with vapor distillation that removes impurities. The water is then remineralized with electrolytes before a final purification with ozone gas that has disinfectant properties (Smartwater, 2016).

Electrolytes & Minerals: SmartWater's electrolytes which it adds for taste are calcium chloride, magnesium chloride, and potassium bicarbonate.

FIJI Water

Packaging: FIJI's packaging reads, "from the islands of FIJI, Natural Artesian Water."

Figure 5: 1-liter bottle of FIJI water

(Natural Artesian Bottled Water, 2016)

Price: A 1liter bottle costs $1.99 at Safeway.

Water Type: Artesian Water. Artesian Water is water that comes from an aquifer which is a natural underground chamber made up of permeable volcanic rock that contains water.

Water Source: FIJI water is sourced from a naturally occurring aquifer in Fiji.

Water Treatment: FIJI water is untreated because it is preserved from external elements until opened. Natural pressure sends the water towards the surface of the earth where it is bottled at the source (Natural Artesian Bottled Water, 2016).

Electrolytes & Minerals: 100% naturally occurring silica, magnesium, and calcium (Natural Artesian Bottled Water, 2016).

Hypothesis Development

This thesis is concerned with the role of emotion in decision making. My research was intended to investigate and test for the presence of emotion in consumer decision making, specifically decision making by millennials when choosing one brand of bottled water over another. I aimed to do this by looking at what factors subjects indicated were most important to them in making their decision, how they were able to articulate this and how their responses aligned with the brand they chose and its specific features.

Based on the literature I had researched, my predictions based on personal knowledge and observations about millennials and their relationships to bottled water I constructed the following hypothesis: Because bottled water is a low-involvement product, consumers do not spend much time consciously and rationally evaluating their decisions, thus I predict there will be indicators of unconscious emotion involved in the decision-making process of millennial test subjects when selecting one brand of bottled water over another.

In order to test my hypothesis, I developed several sub-hypotheses involving indicators I believed would reveal the presence of emotion as opposed to pure rationality in the decision-making process. Emotional indicators include an inability to clearly articulate the thought process behind the decision and the conscious consideration of costs and benefits involved. This would also include responses about which features influenced decision making and an inability to clearly articulate why that feature was beneficial to the subject. Another emotional indicator would be the selection of a brand that did not align with the reasoning for choosing it. For example, if

a subject indicated that price was the most important factor to them and proceeded to choose the most expensive brand of water.

- *Hypothesis 1: Subjects will be more likely to select bottled water brands they are already familiar with.*

  Based on research on mere exposure theory and the connection between people's preferences and what is already familiar to them, I predict subjects will select bottled water brands they have already tried rather than evaluating the value of each brand and rationally comparing their options. If this hypothesis tests true, it would indicate the presence of emotion because the familiarity of a product does not make it more or less beneficial to the consumer.

- *Hypothesis 2a: Subjects will be more likely to respond that the brand of bottled water they selected tastes best to them.*

- *Hypothesis 2b: Subjects who respond that the brand of bottled water they selected tastes best to them will not be able to select that same water in a blind taste test.*

  The formulation of these hypotheses is based on research concerning the effect of expectations which suggests that people are more likely to see things as they expect them to be. It is also based on my own observations about consumers and bottled water; there is little difference between the taste of different waters as compared to the degree of difference in the taste of other types of beverages. However, taste is one of the most theoretically rational reasons for making a beverage choice which is why I believe subjects will respond in this manner. If this hypothesis tests true it would indicate emotional decision making because it

would represent the inability of a subject to accurately articulate the reasoning behind their decision.

- *Hypothesis 3: Subjects will be more likely to respond that they did not consider price as part of their decision-making process.*

  This hypothesis is based on my own observations about consumers and bottled water and the fact that the prices of bottled water are all similar to each other, each within 40 cents of the other. This response would indicate the presence of emotion in the decision because it would exclude a conscious evaluation of the cost of the decision.

- *Hypothesis 4a: Subjects who respond that water source affects their decision making will have difficulty effectively articulating why.*
- *Hypothesis 4b: Subjects who respond that water treatment affects their decision making will have difficulty effectively articulating why.*
- *Hypothesis 4c: Subjects who respond that electrolyte and mineral content affects their decision making will have difficulty effectively articulating why.*

  These hypotheses are based on research done about snap judgements and the subsequent difficulty people have expressing their reasoning behind these judgements and their resultant actions. This research in combination with personal experience and observation about consumers and bottled water led me to these predictions. Bottled water is a low-involvement product which implies that consumers haven't spent a significant amount of time looking into each product. In addition, consumers generally accept the fact that water source, water treatment and electrolyte and mineral content are all important to the

quality of a bottled water. However, they do so without any personal investigation as to why. This leads me to believe that those who indicate the importance of any of these features do so because they have a generic belief in their importance without the ability to articulate why. This would indicate the presence of emotion in the decision because it would not involve a careful, factual analysis of each of these factors.

- *Hypothesis 5: Subjects will be more likely to respond that packaging design does not affect their decision making.*

  It is important first to note that personal observation and experience with bottled water have led me to believe that packaging design weighs heavily into the purchasing decision because it is the most visual differentiator between brands. However, research conducted on the effects of thin slicing and snap judgements reveal a difficulty for consumers in articulating the way that emotional factors, like packaging design, impact decision making. Thus I do not believe subjects will be aware of the way packaging design factors into their decisions and thus will not articulate its influence.

- *Hypothesis 6: When asked in an interview why they chose the brand they did, subjects will have a difficult time clearly articulating the reasons behind their decision making.*

  This hypothesis is based on research conducted by people like Norman Maier and Malcom Gladwell who observed the inability of subjects to clearly and consciously reason through their decisions because they involved unconscious emotional factors. This led to subsequent difficulty in their ability to verbalize

exactly what prompted their decision making. This difficulty would reveal the presence of emotion in the decision because it would indicate unconscious, inexplicable factors.

To test these hypotheses, I conducted a survey, a blind taste test and a short interview surrounding each subject's decision to choose a particular brand of bottled water over another.

Methodology

Participants

I conducted my testing on 21 individual participants who I recruited in person from one of the University of Oregon's journalism classes. I chose to use university students because I felt I could obtain a diverse group of participants while remaining within the target millennial age range. Students were informed ahead of time what the study would entail and provided with a consent form which they were asked to fill out before the commencement of the study. The consent form reiterated the details of the study and all elements to which they must have been willing to give consent.

Design

Each study was conducted in private room located in a public university building. The individual participants and myself were the only people in the room and test results and responses were kept completely confidential. Participants were allowed to begin the study only after completing the consent form.

Prior to being asked any questions, participants were presented with 1-liter bottles of Aquafina, Glacéau SmartWater and FIJI Water. In front of each bottle was a tag listing the price.

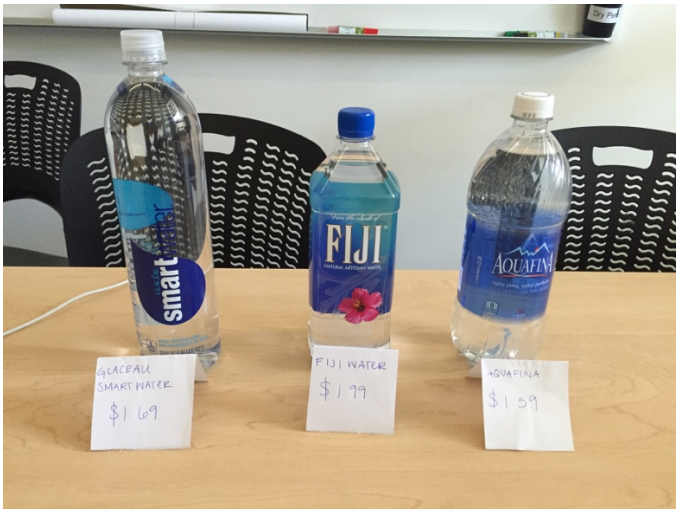

Figure 6: Study set-up

From left to right: 1-liter bottles of Glacéau SmartWater, FIJI Water, Aquafina

The first stage of the study included a short survey asking first which brand of bottled water a subject would be most likely to purchase followed by a series of questions about which factors influenced their decision making. These questions asked about subjects' familiarity with each product and the importance of features like taste, price, water source, water treatment, electrolytes and mineral content and packaging design to each subject.

Subjects were then asked to participate in a blind taste test. Each sample of water was randomly labeled A-C. After tasting each, subjects were asked to rank them in order of best tasting to worst tasting.

Figure 7: Study set-up 2

Randomly labeled water samples for blind taste test

The last part of the study involved a short interview in which I asked only one question: “Why did you choose brand (insert whichever brand they chose)?” I only asked follow up questions based on their initial responses in order to guarantee clarity. For example, “Can you explain what you mean by that?” or “Can you explain why that is important to you?” The entire process took between twenty to thirty minutes for each subject.

Results

The data from the 21 responses were gathered over a two-week period and were organized and analyzed both quantitatively and qualitatively. Of my original six sub-hypotheses, four were supported by data.

Hypotheses

Hypothesis 1, Hypotheses 2a-2b, Hypotheses 4a-4c and Hypothesis 6 tested true and the results are as follows:

Hypothesis 1

Hypothesis 1 predicted that subjects would be more likely to select bottled water brands they were previously familiar with. The data supported this hypothesis.

- 4/21 subjects were unfamiliar with at least one of the brands present.
- 100% of these four respondents selected a brand they were familiar with.
- 100% of total respondents selected a brand they were familiar with.

Hypotheses 2a-2b

Hypothesis 2a predicted that subjects would be more likely to respond that the brand of bottled water they selected tastes the best to them. The data supported my hypothesis.

- 66.67% of total respondents said they would choose the water that tasted the best to them.
- 28.57% of total respondents said they did not consider taste when making their choice.

- 4.76% of total respondents said they would not choose the water that tasted best to them.

Hypothesis 2b predicted that the subjects who responded that the brand of bottled water they selected tastes the best to them will not be able to select that same water in a blind taste test. The data supported my hypothesis.

- Of the 14 people who responded that they would choose the water that tasted the best to them, only 28.57% ranked that brand of water as the one that tasted best with the other 71.43% ranking a different brand as the best tasting.

Hypotheses 4a-4c

Hypothesis 4a predicted that subjects who respond that water source affects their decision making will have difficulty effectively articulating why. The data supported my hypothesis.

- 5/21 subjects responded that water source affected their decision making. The following are each of their explanation as to why. None give any clear detail or reasoning about why water source is beneficial to them or why the source of the water they chose was better than that of another brand, nor did any of the responses even cite what the water source of the brand they chose was.
    - "I like the idea of ethically sourced water."
    - "I rarely check where the water comes from, I assume if it's a good brand, the source is good as well."

- "There have been some bottle of water known to have high mineral content, recently in the news, so I would prefer a brand that can guarantee fresh quality."
- "I care where the water comes from."
- "I'd like to have at least some idea of where the water is coming from."

Hypothesis 4b predicted that subjects who respond that water treatment affects their decision making will experience difficulty effectively explaining why. The data supported my hypothesis.

- 6/21 subjects responded that water treatment affected their decision making. The following are each of their explanations as to why. None give any clear detail or reasoning about why water treatment is beneficial to them or why the treatment of the water they chose was better than that of another brand, nor did any of the responses specifically cite the way their water selection was treated.
    - "for environmental reasons"
    - "I wouldn't know what differentiates good from bad water treatment."
    - "I don't want added preservatives or harmful things added."
    - "I care about what they do with the water"
    - "I want to make sure that there isn't chemicals in the water."
    - "I would like to know if it was treated properly and filtered out any water-borne pathogens."

Hypothesis 4c predicted that subjects who respond that the electrolyte and mineral content of the water affects their decision making will have difficulty effectively articulating why. The data supported my hypothesis.

- 6/21 subjects responded that the electrolyte and mineral content of the water affected their decision making. The following are each of their explanations as to why. None give any clear detail or reasoning about why electrolyte and mineral content is beneficial to them other than that they know it is or that it increases their hydration. Nor did any of the responses site why the electrolytes and minerals in one brand were better than those in another brand. None of the responses mentioned a single specific type of electrolyte or mineral.
    - "I like to think that electrolytes and mineral content is good for me"
    - "If possible, electrolytes and mineral content improves my water experience, but it is not my biggest concern."
    - "makes me feel good about myself while drinking it"
    - "I tend to get bad headaches due to dehydration, so high electrolyte content affects my decision."
    - "More electrolytes makes me think I am getting more hydrated and higher quality water"
    - "I care what's in the water"

Hypothesis 6

Hypothesis 6 predicted that subjects, when interviewed, would have a difficult time clearly articulating the reasons behind their decision making. The data did support my hypothesis.

- 14/21 survey respondents made at least one statement of uncertainty over the course of their interview. Statements were similar to “I don’t know”, “For some reason”, “I guess” and “I have no idea.”

Hypothesis 3 and Hypothesis 5 did not test true and the results are as follows:

Hypothesis 3

Hypothesis 3 predicted that subjects would be unlikely to respond that they consider the price of the bottled water when making their decision. The data did not support my hypothesis.

- 19.05% responded that they did not consider price a factor when making their decision
- 66.67% responded that they preferred the bottle with the lowest price
- 14.29% responded that they did not prefer the bottle with the lowest price

Hypothesis 5

Hypothesis 5 predicted that subjects would be more likely to respond that packaging design does not affect their decision making. The data did not support my hypothesis. In fact, it supported the opposite.

- 71.43% of respondents said that the packaging design of the bottled water did affect their decision making

Additional Results

In addition to measuring results that determined the the accuracy of my sub-hypotheses, I was able to gather additional data, using similar qualitative and quantitative methods

of analysis that contributed in proving my overarching hypothesis about the presence of emotion in subjects' decision making.

Packaging Design

Although the ability of subjects to consciously cite the role of packaging design in their decision making did not support Hypothesis 5, the explanations from all 15 subjects who responded this way revealed an inability to consciously and rationally articulate why packaging design was important to their choosing one brand over another. Responses were similar to the following:

- "I like fun colors and a modern design"
- "I prefer to get a water bottle that is easy to carry, sleek, and simple."
- "If it is a familiar design, I am more likely to purchase the bottled water"
- "For some reason, if I enjoy the design of the water bottle, it influences my decision. If I enjoy the design, I am more likely to purchase the bottle."
- "More attracted to a more interesting design"
- "I have a thing for cool bottles"
- "I like it to look pretty ;)"

Familial Connection

In their interviews, respondents repeatedly noted the fact that someone in their family had bought a bottled water brand for them in the past as a factor that played a part in their decision making. 28.57% of respondents mentioned their families in in a manner similar to the following. None were able to articulate clearly why this familial

connection would add value to the option they chose. Responses were similar to the following:

- "Aquafina always seems to be the cheaper option if we're going on a road trip and my mom for some reason thinks we're going to get stuck in the dessert because she is a mom and she thinks that way about things."
- "Aquafina just seems like something like my parents have gotten for me a lot."
- "Because generally, my parents have bought Aquafina first so it's the first one I'm drawn to."

Discussion

The most significant elements of the data collected are not which specific features of bottled water brands played a part in subjects' decisions but rather the ways in which they played a part. For example, it is not important to look at the number of people who value electrolytes in their bottled water but rather why they value electrolytes in addition to if and how they were able to articulate this and how it factored into their choice. Framing the information in this way allowed me to examine the validity of my hypotheses.

The data I gathered helped prove my sub-hypotheses 1, 2a-2b, 4a-4c, and 6. This in combination with the results I was able to gather outside of these hypotheses work together to prove my overarching hypothesis that there are indicators of the unconscious emotion involved in the decision-making process for choosing a bottled water. I categorized my results by their relation to emotion and grouped them in the following ways.

Difficulty Articulating Decision-Making Process

Similar to what Malcom Gladwell observed with his test subjects and thin slicing and what Norman Maier observed with his rope experiment, the presence of unconscious emotion in decision making leads to an inability to articulate how decisions are made. When subjects were asked to explain the significance of factors like water source, water treatment and electrolytes which they listed as important in their choice of a certain bottled water brand over another, they could not. They defaulted to vague responses like, "I care what's in my water."

Unconsciously subjects have developed a connection between these features and the quality of water, however because this part of their decision remains inaccessible to their conscious mind, they cannot articulate it. The presence of unconscious emotional factors was reaffirmed by the number of respondents in their interviews who spoke without conviction and used statements of uncertainty like, “I have no idea,” when asked why they chose the brand they did. This occurred even after they had just taken a survey which detailed a list of all the features that they could rationally base their decision off of, demonstrating the powerful yet inexplicable presence of emotion.

Importance of Familiarity

My research backs up what has already been proven about the mere exposure theory, that people are more likely to prefer something they are already familiar with. The elements of my study that most clearly back this up are that 100% of subjects chose a brand they were familiar with in addition to the fact that 28.57% of respondents mentioned a past connection with their family and their brand of choice. Familiarity in no way contributes to the measurable value of a product, positioning it as more or less beneficial than another choice however it is a powerful factor in decision making and one that clearly indicates the role of unconscious emotion, especially in conjunction with the fact that none of the respondents in my study identified a clear benefit that results from brand familiarity.

Effect of Expectations

People are prone to seeing things how they expect to see them. Previous patterns and connections taking place unconsciously are converted to positive opinions about a

certain subject, and in the case of my study a certain brand of water. These opinions lead to a warped perception of elements like taste. This was evidenced by the fact that of the 14 people who responded that they would choose the water that tasted best to them only 28.57% ranked the brand of water they initially chose as tasting the best. Without the help of factors like brand familiarity and packaging design to influence their emotional decision making, their opinions about taste were drastically different illustrating just how powerful these emotional influences are.

Importance of Packaging Design

Although the ability of respondents to recognize the importance of packaging design is indicative of rational decision making, what suggests a more emotional influence is their inability to articulate why this would cause them to choose one brand over another. While packaging design is the most visible and immediate way to differentiate one type of water from another, it in no way adds a measurable benefit to the consumer, and if it did, the subjects in this study were not able to consciously describe it. Rather the tendency of a subject to choose packaging that they find visually appealing is part of an unconscious connection made by the brain between packaging and quality product.

Loss Aversion

While the response by 66.7% of test subjects to prefer the bottle of water with the lowest price, is indicative of a rational cost, benefit analysis it could also be the result of loss aversion. There is no way for me to measure which one it might be using the data from this study however the fact that the bottles were no more than 40 cents

apart in price combined with the fact that bottled water is already 300 times more expensive than tap water leads me to believe that it is not the actual sum of 40 cents that subjects are unwilling to part with. Rather it is the emotional aversion to loss and the idea of losing more money by choosing one option over another that led respondents in this direction.

Areas for Future Research

Because the presence of emotion in decision making is still in the process of being more fully understood, there are many possible directions that future research could take. The following are those I believe would yield the most interesting results.

In order to gain further insight into the effects of emotion and their relation to age demographics, I would suggest conducting the same or a similar study on adults who are a part of Generation X and see how the results compare with those examined in this study. It would be particularly informative if a method of comparison was developed that could allow one to measure which generation emotional decision making was more apparent in. Studies could even extend to further generations like Generation Z and lead to developments in understanding if the role of emotion in decision making is related in any way with age.

In conducting my research, I encountered two respondents who specifically noted that they usually did not purchase bottled water. It would be interesting to do the same or similar testing on two groups – one of regular bottled water drinkers and the other of people who say they do not drink water. One from there could develop a method of measuring which group demonstrated a higher degree of emotional decision making.

The most influential future research I believe would be to conduct a series of similar tests with high or medium involvement products like cars or electronics using the same test subjects. One could from there compare the two tests and evaluate whether a higher degree of emotion is involved in the purchasing of high or low involvement products or if perhaps they include the same degree of emotion.

Conclusion

The research conducted in this thesis proves that emotions are present in millennial consumer decisions to purchase bottled water, and more broadly suggests the same of low-involvement products.

It has important implications for a number of consumer related fields, most interesting of which is advertising. Modern day research methods for advertising campaigns aim to understand how consumers think about, relate to and consume products. Methods like interviews, focus groups and experiments rely on members of the target audience to articulate reasons behind their purchasing decisions. Results from these types of research are typically then used to inform the creation of an advertising campaign. However, with so many consumers unable to understand, let alone articulate, the role of unconscious emotions in different types of purchasing decisions, the results of this research cannot be entirely accurate.

In better understanding the decision making process for the purchasing differing consumer products, we can better understand the ways that consumers relate to these products and create better more affective forms of advertising and marketing.

On a larger scope, a more thorough understanding of the role of emotion in human decision making can help combat persisting assumptions that humans, using rational thought, have the ability to suppress or control their emotions. The decisions that humans make influence every part of their lives and in better understanding how we decide, we can better understand how to make decisions that will improve our lives in the long run.

Appendices

Figure 1: Data Collection Materials

Survey

1. If you were to purchase a bottle of water, of the three brands here which would you choose?

a. Aquafina
b. FIJI Water
c. Glacéau Smartwater

2. Have you ever consumed the bottled water you chose?

a. Yes
b. No

3. Please rank in personal order of importance (1 being most important, 7 being least important) the following characteristics in a bottled water:

Electrolytes or Mineral Content ____
Packaging Design ____
Price ____
Size ____
Taste ____
Water Source ____
Water Treatment ____

4. Please indicate which of the following applies to your bottled water decision:

a. I chose the water that tastes the best to me
b. I did not choose the water that tastes the best to me
c. I did not consider taste when making my choice

5. When selecting a brand of bottled water:

a. I prefer the bottle with the lowest price
b. I do not prefer the bottle with the lowest price
c. I do not consider price a factor when selecting a bottled water

6. When selecting a brand of bottled water:

a. Water source does not affect my decision.
b. Water source does affect my decision. Please explain:

7. When selecting a brand of bottled water:

a. Water treatment does not affect my decision.
b. Water treatment does affect my decision. Please explain:

8. When selecting a brand of bottled water:

a. Electrolyte or mineral content does not affect my decision.
b. Electrolyte or mineral content does affect my decision. Please explain:

9. When selecting a brand of bottled water:

a. Packaging design does not affect my decision.
b. Packaging design does affect my decision. Please explain:

Taste Test

Of the water samples you just tasted please rank each in order of which tasted the best to you (1 being the best, 3 being the worst)

Sample A:_____
Sample B:_____
Sample C:_____

Interview

"Why did you choose (brand) bottled water?

The only follow up question I will ask is "Can you please elaborate on (previously mentioned statement).

Figure 2: Human Subject Consent Form

VERSION: 4/1/16

University of Oregon Consent Form

University of Oregon Robert D. Clark Honors College
Informed Consent for Participation as a Subject in
Examining Millennial Purchasing Decisions: Bottled Water
Investigator: Mairi McCaslin
Adult Consent Form

Introduction
- You are being asked to participate in a research study concerning the decision making process involved when purchasing bottled water.
- You were selected as a possible participant because you are a University of Oregon student between the ages of 18 and 29 years old.
- We ask that you read this form and ask any questions that you may have before agreeing to participate in this study.

Purpose of Study:
- The purpose of this study is to examine different factors involved in the decision to purchase one brand of bottled water over another.
- total number of subjects is expected to be 30.

Description of the Study Procedures:
- If you agree to be in this study, we would ask you to do the following things: answer several survey questions, taste and rank three different unlabeled types of water and respond to a series of brief post-survey interview questions. Audio from this interview will be recorded. This should take approximately 20 minutes.

Risks/Discomforts of Being in the Study:
- There are no reasonable foreseeable (or expected) risks. This study may include risks that are unknown at this time.

Benefits of Being in the Study:
- The purpose of the study is to gain an understanding of the decision making process behind purchasing bottled water and its what it could possibly indicate about how people make similar product purchasing decisions.
- There are no expected benefits to the participant.

Payments:
- There will be no financial reimbursement for participation in this study.

Costs:
- There is no cost to you to participate in this research study.

Confidentiality:
- The records of this study will be kept private. Written materials will be either on my person

VERSION: 4/1/16

and monitored at all times or kept in a locked room in my residence. Digital materials will be kept on my computer which is password protected. In any sort of report, we may publish, we will not include any information that will make it possible to identify a participant. Participants' names will not be included in any of the written or digital materials.

- The Principal Investigator and Faculty Advisor will be the only people with access to this file. However, please note that the Institutional Review Board and internal University of Oregon auditors may review the research records.

Voluntary Participation/Withdrawal:

- Your participation is voluntary. If you choose not to participate, it will not affect your current or future relations with the University.
- You are free to withdraw at any time, for whatever reason.
- There is no penalty or loss of benefits for not taking part or for stopping your participation. Stopping participation will not jeopardize grades nor risk loss of present or future faculty/school/University relationships

Contacts and Questions:

- The researcher conducting this study is Mairi McCaslin. For questions or more information concerning this research you may contact her at mairim@uoregon.edu
- If you believe you may have suffered a research related injury, contact Mairi McCaslin at 425-301-6860 who will give you further instructions.
- In the case of either of these events, you may also contact the Faculty Advisor for this study, Shan Anderson at shand@uoregon.edu.
- If you have any questions about your rights as a research subject, you may contact: Research Compliance Services, University of Oregon at (541) 346-2510 or ResearchCompliance@uoregon.edu

Copy of Consent Form:

- You will be given a copy of this form to keep for your records and future reference.

Statement of Consent:

- I have read (or have had read to me) the contents of this consent form and have been encouraged to ask questions. I have received answers to my questions. I give my consent to participate in this study. I have received (or will receive) a copy of this form.

Signatures/Dates

_____

Study Participant (Print Name)

_____

Participant or Legal Representative Signature **Date**

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